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Application No. 10/511,464
Amendment dated November 15, 2006
Reply to Office Action of October 23, 2006

Docket No.: 013743.0104PTUS

AMENDMENTS TO THE CLAIMS

Claims 1 - 6 (Canceled)

7. (Original) A method for producing a nanocomposite ceramic fiber, comprising steps of:

providing a primary precursor, said primary precursor being a precursor of a non-oxide ceramic;

mixing a secondary precursor with said primary precursor to form an intermediate mixture, said secondary precursor being a precursor of an oxide ceramic;

heating said intermediate mixture to a viscous state;

drawing said viscous intermediate mixture into a fiber;

thermosetting said fiber into a rigid state; and

pyrolyzing said fiber to form a nanocomposite fiber comprising a nanophase distribution of said oxide ceramic within said non-oxide ceramic.

8. (Original) A method as in claim 7 wherein said thermosetting is performed at a temperature above 160°C.

9. (Original) A method for producing a nanocomposite fiber according to claim 7 wherein said oxide ceramic is a metal oxide ceramic and said secondary precursor is an organo-metallic precursor of said metal oxide ceramic.

10. (Original) A method for producing a nanocomposite fiber according to claim 7 wherein said non-oxide ceramic contains a silicon atom, a carbon atom, and a nitrogen atom.

11. (Original) A method for producing a nanocomposite fiber according to claim 7 wherein said oxide ceramic contains atoms selected from groups III and IV of the periodic system of the elements or transition metals or lanthanoid metals and oxygen.

12. (Original) A method for producing a nanocomposite fiber according to claim 7 wherein said oxide ceramic contains a zirconium atom and an oxygen atom.

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13. (Original) A method for producing a nanocomposite fiber according to claim 7 wherein said primary precursor does not have any temperature to make it viscous for drawing fiber, has a first thermosetting temperature, and has a first pyrolyzing temperature, and wherein said secondary precursor has a first drawing temperature to make it viscous for fiber drawing, has a second thermosetting temperature, and has a second pyrolyzing temperature; wherein a mixture of said primary and secondary precursors has a second drawing temperature to make it viscous for drawing fiber, has a third thermosetting temperature close to said second drawing temperature, and a third pyrolyzing temperature.

14. (Original) A nanocomposite ceramic fiber, comprising:
a non-oxide ceramic; and
a nanophase distribution of an oxide ceramic within said non-oxide ceramic.

15. (Original) A nanocomposite ceramic fiber according to claim 14 wherein said non-oxide ceramic is amorphous.

16. (Original) A nanocomposite ceramic fiber according to claim 14 wherein said oxide ceramic is amorphous.

17. (Original) A nanocomposite ceramic fiber according to claim 14 wherein said non-oxide ceramic contains a silicon atom, a carbon atom, and a nitrogen atom.

18. (Original) A nanocomposite ceramic fiber according to claim 14 wherein said oxide ceramic contains atoms selected from groups III and IV of the periodic system of the elements or transition metals or lanthanoid metals and oxygen.

19. (Original) A nanocomposite ceramic fiber according to claim 14 wherein said oxide ceramic contains a zirconium atom and an oxygen atom.

Claims 20 - 45 (Canceled)